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September 10, 2001

Ms. Cheri Davis
Project Manager
California Energy Commission
Energy Facilities Siting and Environmental Protection Division
1516 Ninth Street, MS-15
Sacramento, CA 95814

Subject: East Altamont Energy Center Application for Certification
Data Request Response Set #2B (01-AFC-04)

Dear Ms. Davis:

Enclosed are 24 copies of the East Altamont Energy Center Application for Certification Data Request Response Set #2B. This data response package provides the revised water balances for the zero liquid discharge system as a revised response to Data Request #95. EAEC LLC will be submitting a supplement to the Application for Certification that describes the proposed project description modification and includes an analysis of the environmental impacts of the modification.

If you have any questions, please call me at 916-920-0300.

Sincerely,

CH2M HILL

Jerry Salamy
Project Manager

Enclosure

STATE OF CALIFORNIA

Before the Energy Resources Conservation and Development Commission

APPLICATION FOR CERTIFICATION FOR THE)	DOCKET NO. 01-AFC-4
EAST ALTAMONT ENERGY CENTER)	(AFC ACCEPTED 06/27/01)
(EAST ALTAMONT))	(* Established 7/7/01)
_____)	(Revision date 08/29/01)

I, Anar Bhimani, declare that on September 10, 2001, I deposited copies of the attached East Altamont Energy Center Data Request Response Set #2B in the United States mail at Sacramento with first class postage thereon fully prepaid and addressed to the following:

DOCKET UNIT

Send the original signed document plus the required 12 copies to the address below:

CALIFORNIA ENERGY COMMISSION
DOCKET UNIT, MS-4
*Attn: Docket No. 00-AFC-14
1516 Ninth Street
Sacramento, CA 95814-5512
E-mail:docket@energy.state.ca.us

* * * *

In addition to the documents sent to the Commission Docket Unit, also send individual copies of any documents to:

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State Water Project Analysis
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Sacramento, CA 95814

US Department of Commerce
National Marine Fisheries
Service
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California Air Resources Board
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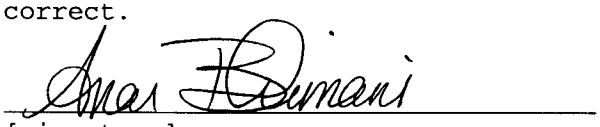
I declare under penalty of perjury that the foregoing is true and correct.



[signature]

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FOR YOUR INFORMATION ONLY! Parties DO NOT mail to the following individuals. The Energy Commission Docket Unit will internally distribute documents filed in this case to the following:

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Commissioner & Presiding Member
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Associate Member
MS-32

Major Williams, Jr.
Hearing Officer
MS-9

Cheri Davis
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MS-15

Lisa DeCarlo
Staff Counsel
MS-14

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Sacramento, CA 95814
Email: pao@energy.state.ca.us

East Altamont Energy Center
Data Requests and Responses (01-AFC-4)
Set #2B

(Response to Data Request: 95)

Submitted to:

CALIFORNIA ENERGY COMMISSION

Submitted by:

East Altamont Energy Center, LLC

September 10, 2000

EAST ALTAMONT ENERGY CENTER
DATA REQUESTS #2B
(01-AFC-4)

Technical Area: Water And Soil Resources
Authors: Lorraine White, John Scroggs, Jim Henneforth & John Kessler
EAEC Authors: Jim McLucas

BACKGROUND

The proposed wastewater system includes one brine concentrator with discharge to two, 5-acre evaporation ponds. When the brine concentrator is out of service, the reject stream from the high TDS reverse osmosis process would be discharged directly to the evaporation ponds. Under average day conditions, this would increase plant loading to the evaporation ponds from the proposed 5 to 20 gpm, up to 132 to 265 gpm. In addition, other projects have proposed a zero liquid discharge system by including a brine crystallizer, eliminating the need for evaporation ponds.

DATA REQUEST

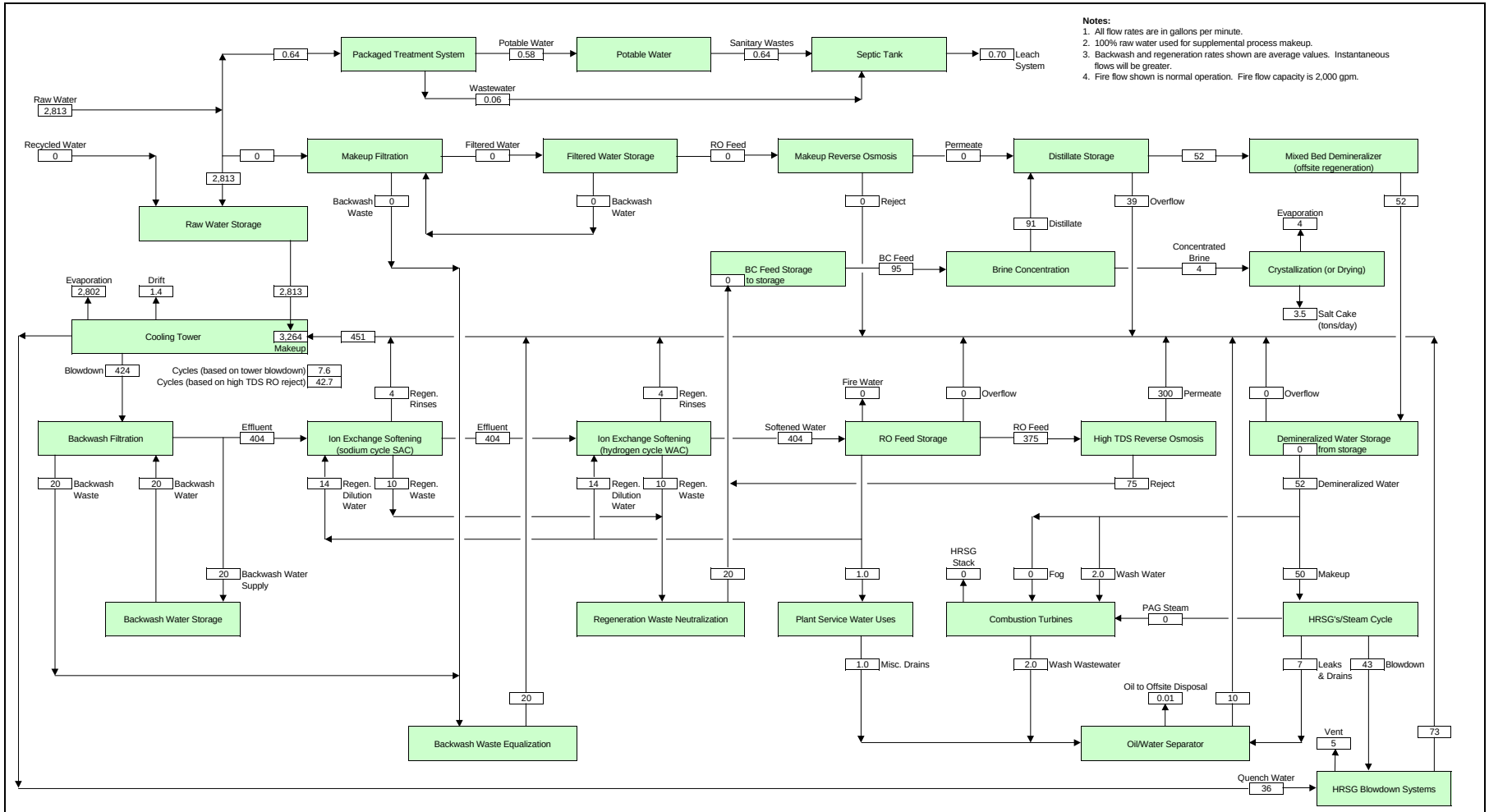
95. Evaluate the feasibility of implementing a brine crystallizer system that would result in no liquid wastewater discharge from the project (onsite or offsite) as an alternative to the evaporation and the wastewater recycle ponds proposed at the EAEC. The analysis should include the impacts on water use and waste discharge, economic impacts (capital and operating costs), plant efficiency and output, solid waste disposal and environmental impacts.

Response: The revised zero liquid discharge system is shown schematically in Figures WR-95-1, -2, -3 and -4. The proposed revisions are recommended in order to:

- Eliminate the evaporation ponds. Their function will be by brine crystallizers or dryers.
- Eliminate the wastewater recycle pond. Filter backwash will instead be discharged to the cooling tower basin. In the event a brine concentrator is down, a storage tank will instead be used to temporarily store the high TDS feed. This configuration is made feasible as a result of revisions to the softening process, which results in less flow to the brine concentration process, and the use of two 50 percent capacity brine concentrators instead of a single 100% capacity unit.

Cooling tower blowdown will first pass through a multi-media filtration system to remove suspended solids. A portion of the filter effluent stream will be sent to a backwash water storage tank for use in backwashing the filters. The backwash wastewater will be sent to an equalization tank from which it will be metered slowly back to the cooling tower basin for reuse. Solids, which accumulate in the bottom of the cooling tower basin, will be removed periodically when the plant is offline for major overhauls. Filtered cooling tower blowdown will next pass through an ion exchange softening process to remove calcium and magnesium. Two ion exchange processes will bed used; the first operating on the sodium cycle and regenerated with sodium chloride brine and the second operating on the hydrogen cycle and regenerated with sulfuric acid. Regeneration waste from the ion exchange softeners

will be sent to an equalization tank from which it will be metered slowly to the brine concentrator. The softened water exiting the ion exchange softeners will be stored in the reverse osmosis feed storage tank. This tank will be the source of water for the plant fire protection and service water systems and also the dilution water for regeneration of the ion exchange demineralizers. Excess softened water will next be sent to a high TDS reverse osmosis (RO) system where the dissolved solids will be reduced and the majority of the silica will be removed. Permeate from the high TDS RO system will be recycled back to the cooling tower. The reject stream from the high TDS RO system will be sent to a storage tank, located upstream of the brine concentrators. Two 50-percent capacity brine concentrators will be used to further concentrate the reject stream from the high TDS RO system along with the regeneration waste from the ion exchange softeners. Distillate from the brine concentrators, low in TDS, will be sent to the distillate storage tank where it will be used as feedwater for the process makeup demineralizers. Excess distillate will overflow the storage tank and be recycled to the cooling tower basin. The concentrated brine solution, which represents the only process waste stream not reclaimed for reuse, will be sent to crystallizers or dryers, where the majority of the water will be evaporated leaving a relatively dry salt cake suitable for landfill disposal.



Rev.		By	Date
E	Revised ZLD system to delete evaporation ponds	JBM	09/04/01
D	Revised evaporation calculation	JBM	08/29/01
C	Added raw water tank, revised PAG	JBM	01/31/01
B	Issued to CH2M HILL	JBM	11/30/00
A	For Tom Laronge's review.	JBM	11/24/00

Design Case: Average Day - 100% Raw Water

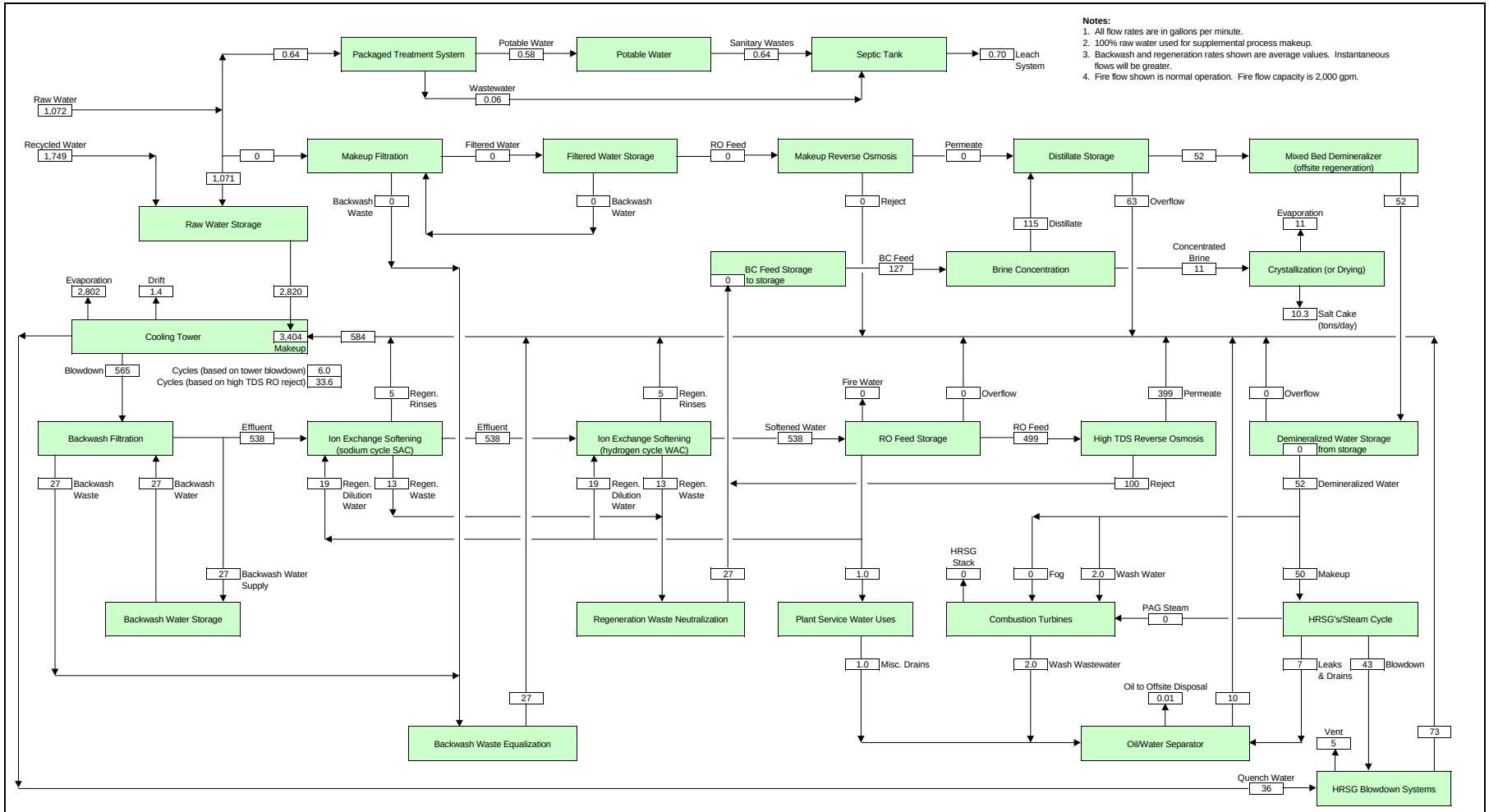
Configuration:	3 x 1, HPD	Site Altitude:	40 ft
Dry Bulb Temp.:	61 deg F	Wet Bulb Temp.:	51 deg.F
Fog:	No		
Power Aug.:	No		
Duct Firing:	No		

CALPINE

East Altamont Energy Center

Plant Water Balance

Figure WR-95-1 Rev. E



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Design Case: Average Day - Raw/Recycled Blend

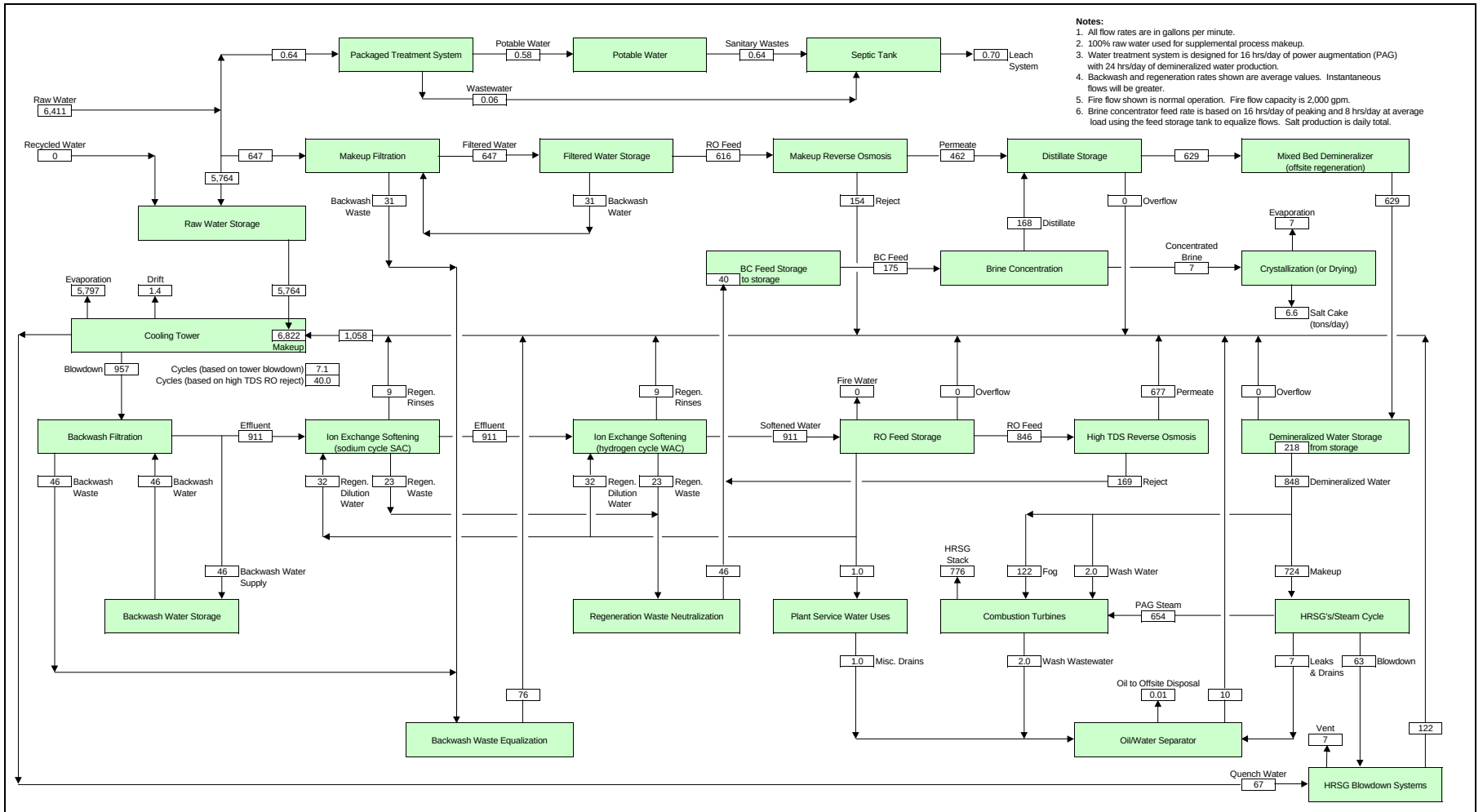
Configuration:	3 x 1, HPD	Site Altitude:	40 ft
Dry Bulb Temp.:	61 deg F	Wet Bulb Temp.:	51 deg.F
Fog:	No		
Power Aug.:	No		
Duct Firing:	No		

CALPINE

East Altamont Energy Center

Plant Water Balance

Figure WR-95-2 Rev. E



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C	Added raw water tank, revised PAG	JBM	01/31/01
B	Issued to CH2M HILL	JBM	11/30/00
A	For Tom Laronge's review.	JBM	11/24/00

Design Case: Peak Day - 100% Raw Water

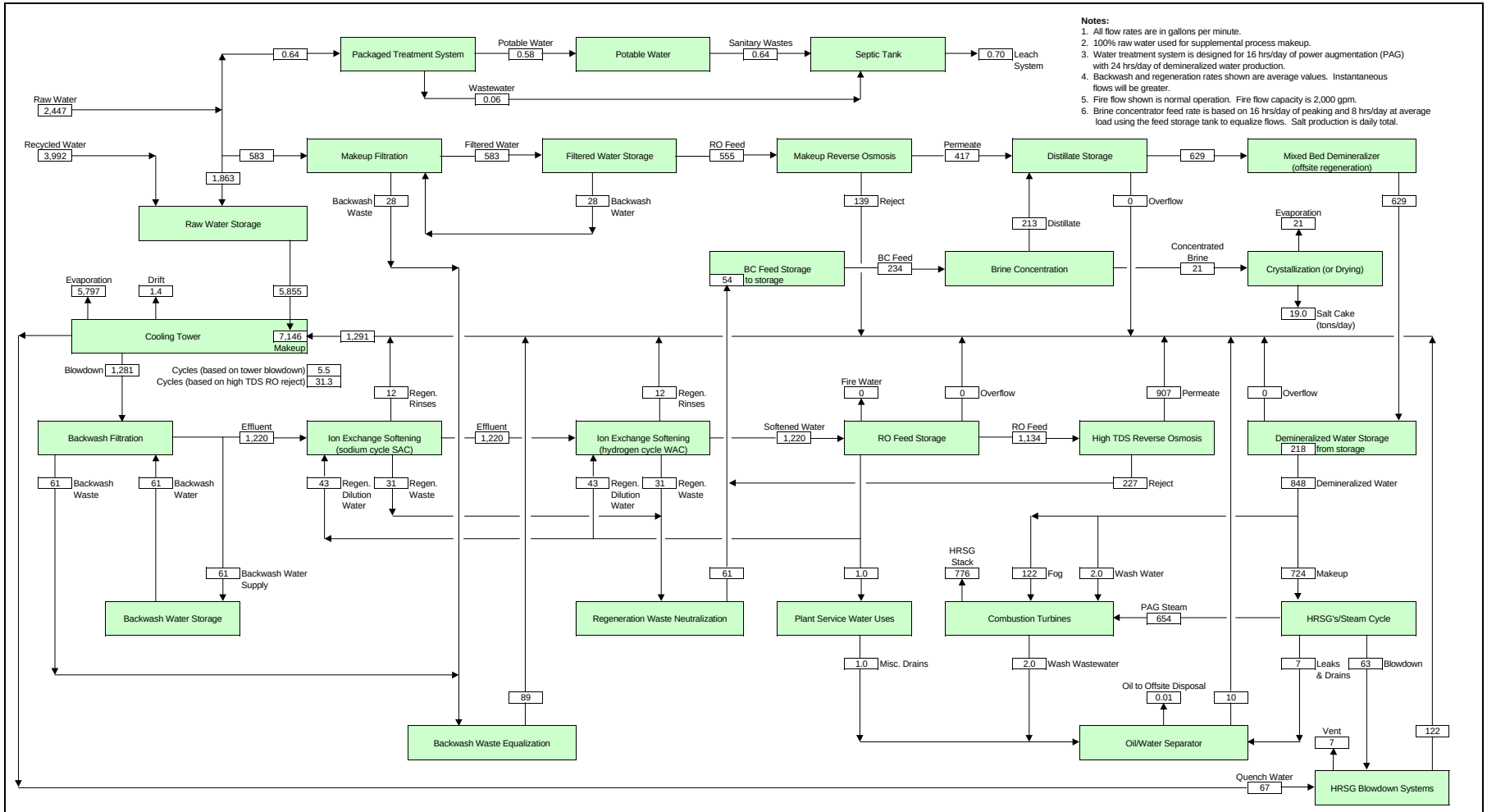
Configuration:	3 x 1, HPD	Site Altitude:	40 ft
Dry Bulb Temp.:	98 deg F	Wet Bulb Temp.:	70 deg.F
Fog:	Yes		
Power Aug.:	Yes		
Duct Firing:	Yes		

CALPINE

East Altamont Energy Center

Plant Water Balance

Figure WR-95-3 Rev. E



Rev.		By	Date
E	Revised ZLD system to delete evaporation ponds	JBM	09/04/01
D	Revised evaporation calculation	JBM	08/29/01
C	Added raw water tank, revised PAG	JBM	01/31/01
B	Issued to CH2M HILL	JBM	11/30/00
A	For Tom Laronge's review.	JBM	11/24/00

Design Case: Peak Day - Raw/Recycled Blend

Configuration:	3 x 1, HPD	Site Altitude:	40 ft
Dry Bulb Temp.:	98 deg F	Wet Bulb Temp.:	70 deg.F
Fog:	Yes		
Power Aug.:	Yes		
Duct Firing:	Yes		

CALPINE

East Altamont Energy Center

Plant Water Balance

Figure WR-95-4 Rev. E